

**RESPONSIVE TESTIMONY OF  
MARGOT EVERETT  
ON BEHALF OF  
DOMINION ENERGY SOUTH CAROLINA, INC.  
DOCKET NO. 2019-182-E**

1   **Q.   PLEASE STATE YOUR NAME, BUSINESS ADDRESS, AND**  
2       **OCCUPATION.**

3   A.           My name is Margot Everett. My business address is 101 California Street,  
4               Suite 4100, San Francisco, California 94111. I am a Director for Guidehouse and  
5               will provide testimony on behalf of Dominion Energy South Carolina,  
6               Inc. (“DESC”).

7  
8   **Q.   ARE YOU THE SAME MARGOT EVERETT THAT OFFERED DIRECT**  
9       **TESTIMONY IN THIS DOCKET?**

10  A.           Yes, I am.

11  
12 **Q.   WHAT IS THE PURPOSE OF YOUR RESPONSIVE TESTIMONY?**

13  A.           The purpose of my responsive testimony is to clarify and further discuss  
14               appropriate (i) treatment of benefits and costs in evaluating DESC’s current net  
15               energy metering (“NEM”) programs and (ii) considerations in developing DESC’s  
16               new NEM tariffs under S.C. Act No. 62 of 2019 (“Act 62”), including the  
17               appropriate framework for a cost-benefit analysis of the same.

1  
2 **Q. WOULD YOU LIKE TO CLARIFY ANY ITEMS FROM YOUR DIRECT**  
3 **TESTIMONY?**

4 A. Yes. The first is that I refer to the Program Administrator Cost test and the  
5 Utility Cost Test (“UCT”) in my direct testimony. These two tests are the same.  
6 Second, in the UCT test, I include lost revenues from behind the meter simultaneous  
7 consumption of customer-generation, as well as lost revenues from monthly netting.  
8 I then reverse out those costs under the assumption that they would be recovered.  
9 Others may exclude the costs and, therefore, would not need to net out the cost  
10 recovery as I have. Although the results would be the same in either scenario, I  
11 wanted to clarify my approach to avoid confusion.

12 Further, the values in Table 6 in my direct testimony have been updated. The  
13 corrected Table 6 is shown below. Please note that values for PV equipment costs  
14 and Lifetime PV O&M are presented as positive, but they are considered costs.

15 Also, the Rate Impact Measure test, (RIM) for Small Commercial included in  
16 Table 8 (Row 2, Column C) has been corrected to exclude tax liabilities assumed to  
17 be incurred by commercial customers for generation. These tax liabilities are  
18 included in the bill savings for the Participant Cost Test, consistent with the solar  
19 forecast. All other values presented in my testimony do not change due to these  
20 clarifications.  
21

*Table 6: Component Value per Customer Class - Corrected*

	Residential	Small Commercial
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Col Row		A	B
1	Self-Generation Bill Savings	0.06554	0.05043
2	Export Credits	0.06142	0.03528
3	Export Carryover Benefit	0.00024	0.00200
4	PV equipment costs	0.14869	0.09607
5	Lifetime PV O&M	0.01712	0.01742
6	ITC Tax Benefit	0.05006	0.03234
7	State Tax Incentive	0.04706	0.02963
8	Depreciation Tax Benefits	0.00000	0.02462
9	Interest Deduction Tax Benefit	0.00000	0.01179

*Table 8: Net Benefit Results by Sector (Annualized \$/kWh)*

	Sector	PCT	UCT	RIM	TRC
Col Row		A	B	C	D
1	Residential	0.11726	0.00000	-0.09112	-0.07655
2	Small Commercial	0.07260	0.00000	-0.08337	-0.01839

**Q. IN YOUR TESTIMONY, YOU ADVOCATE USING FOUR BENEFIT COSTS TESTS BASED ON THE CALIFORNIA STANDARD PRACTICE MANUAL. ARE THERE CERTAIN TESTS THAT SHOULD BE UTILIZED EXCLUSIVELY BY THE PUBLIC SERVICE COMMISSION OF SOUTH**

**CAROLINA (“COMMISSION”) WHEN EVALUATING THE CURRENT  
NEM PROGRAMS OR FUTURE SOLAR CHOICE TARIFFS?**

A. No, I recommend using all four tests to ensure a comprehensive view of the costs and benefits from all perspectives. This is supported by the fact that the California Standard Practice manual states:

The tests set forth in this manual are not intended to be used individually or in isolation. The results of tests that measure efficiency, such as the Total Resource Cost Test, the Societal Test, and the Program Administrator Cost Test, must be compared not only to each other but also to the Ratepayer Impact Measure Test. This multi-perspective approach will require program administrators and state agencies to consider tradeoffs between the various tests. Issues related to the precise weighting of each test relative to other tests and to developing formulas for the definitive balancing of perspectives are outside the scope of this manual. The manual, however, does provide a brief description of the strengths and weaknesses of each test (Chapters 2, 3, 4, and 5) to assist users in qualitatively weighing test results.<sup>1</sup>

Further, as South Carolina starts to consider more complex rate structures to replace the current NEM rate, all four tests will be critical for understanding the implications of the new rates and the potential improvements that are sought through new structures. Certainly, the Commission can weight each test differently—and that is a common practice in many jurisdictions—but excluding any one test in the process could result in a distorted view of the improvements of a new structure and lead to an inefficient decision by the Commission.

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<sup>1</sup> Page 6, of the “California Standard Practice Manual Economic Analysis of Demand-Side programs and Projects” [https://www.cpuc.ca.gov/uploadedFiles/CPUC\\_Public\\_Website/Content/Utilities\\_and\\_Industries/Energy - Electricity and Natural Gas/CPUC\\_STANDARD\\_PRACTICE\\_MANUAL.pdf](https://www.cpuc.ca.gov/uploadedFiles/CPUC_Public_Website/Content/Utilities_and_Industries/Energy_Electricity_and_Natural_Gas/CPUC_STANDARD_PRACTICE_MANUAL.pdf)

**Q. PLEASE EXPLAIN HOW TO DISTINGUISH BENEFITS AND COSTS RESULTING FROM NETTING PROGRAMS IN THE UCT.**

A. Treatment of benefits and costs in the UCT depends upon the final program or tariff structure. In any structure, it is common for customers to simultaneously consume electricity generated, thereby lowering (i) the energy they consume from the utility and (ii) their utility bills. All generation not consumed by the customer is then put on the grid. The result is that the customer receives a benefit from being able to ‘bank’ those kWhs with their utility until they need them later in the month. ‘Banking’ is a virtual instrument, not physical storage of the customer’s generation. Specifically, consider an example where a customer generates 3 kWh at 1pm in January and consumes 1 kWh at 1pm and 2 kWh at 8pm. In this example, the customer consumes 1 kWh of generation and exports the remaining 2 kWh to their utility at 1pm. The customer then uses the 2 kWh of exported energy to offset the 2 kWh delivered by the utility at 8pm. The customer ‘banked’ the 2 kWh to offset the delivered energy, therefore the customer was able to use all 3 kWh to cover their load and pay nothing for the 2 kWh delivered by the utility. This two-way transaction is typically referred to as “netting.”

Depending on the netting design, these exports can be banked for an hour, day, month, season, or year. The customer can then use these banked kWh to offset kWhs they consume at times their systems are not generating. This is the primary distinction of an NEM program—the customer can ‘bank’ a kWh generated not used

1 to offset a kWh consumed at a different time within a ‘netting period’. As noted  
2 above, ‘netting’ allows customers to offset energy usage in hours when their  
3 generator is not operating, resulting in no payment to the utility for energy delivered  
4 because previous ‘banked’ exports are used to offset that usage. Therefore, the  
5 compensation the customer is receiving for a kWh generated within the netting  
6 period is equal to the customer’s retail rate.

7 The current NEM programs allow for banking for the year. For example, a  
8 customer may use a kWh generated and exported in January to first offset a kWh  
9 consumed in that month. On the other hand, the customer could bank that same kWh  
10 to offset a kWh consumed at any point during the remainder of the year. For any  
11 ‘banked’ kWh not used to offset billed usage by year-end, DESC is then required to  
12 provide the customers with a bill credit equal to those banked kWhs at the utility’s  
13 avoided cost rate, and the amount of banked kWh would reset to zero for the start of  
14 the upcoming year.

15 In summary, NEM customers receive benefits from NEM programs in three  
16 primary ways: (i) lower bills by consuming their generation when it is generated, (ii)  
17 export credits to offset consumption the customer has when the generation is not  
18 meeting their needs during the designated netting period, and (iii) export credits for  
19 generation remaining after netting in exchange for a bill credit.  
20

21 **Q. HOW SHOULD LOST REVENUES FROM CUSTOMER-GENERATION BE**  
22 **TREATED IN THE UCT?**

1 A. In my direct testimony, I included lost revenues from customer-generation as  
2 a cost in the UCT, and I offset those costs with a benefit for cost recovery, as  
3 permitted by S.C. Act No. 236 of 2014 (“Act 236”). This lost revenue—absent the  
4 offset for the benefits—is included in the Rate Impact Measure Test (“RIM”), and is  
5 relevant in considering the net benefits of the current NEM programs or future Solar  
6 Choice tariffs. As opposed to Act 236, Act 62 notes prohibits recovery of lost  
7 revenues from self-generation, therefore, the treatment of these lost revenues  
8 (specifically lost revenues from simultaneous consumption of generation) in the  
9 UCT may need to be reviewed based on the proposed Solar Choice program design.

10  
11 **Q. HOW SHOULD LOST REVENUES FROM NETTING BE TREATED IN**  
12 **THE UCT?**

13 A. Lost revenues from netting should also be included as a cost, but the offsetting  
14 benefit depends on two considerations: (i) are there costs to netting and (ii) is there  
15 a value difference between the kWhs banked with the utility and the kWh’s the  
16 customer consumes later?

17 The first requires that any incremental costs associated with the utility  
18 receiving an exported kWh, regardless of netting approach, should be included in the  
19 UCT.

20 The second consideration requires that the value of the difference in value of  
21 a kWh ‘banked’ versus a kWh of usage also be included in the UCT. Specifically,  
22 if a kWh at 1pm is worth more than the value of the kWh at 8pm, then the difference

1 in value between the 1pm and 8pm kWh should be included in the benefit cost  
2 analysis under the UCT as well.

3 It is important to note that the duration of ‘netting’ period has a direct impact  
4 on the magnitude of the lost revenues. Specifically, if ‘netting’ is allowed for a year,  
5 like the current NEM program, the customer has more opportunities to use the  
6 ‘banked’ kWh over the year, while ‘netting’ allowed for a month would result in  
7 fewer ‘banked’ hours being used to offset load. Generally hourly ‘netting’ results in  
8 the lowest lost revenues from ‘netting’. Also, shorter ‘netting’ periods more closely  
9 links the value of exports ‘banked’ versus customer usage offset by ‘banked’ exports.

10 In summary, lost revenues due to banked exports are used to offset future  
11 billed consumption, and should be included in the UCT along with any costs for  
12 creating the banking instrument. These costs can then be offset by any  
13 considerations in the rate structure that allow the utility to recover these costs.

14  
15 **Q. HOW SHOULD EXPORT CREDITS BE TREATED IN THE UCT?**

16 A. Finally, credits from the utility for remaining exports after netting should be  
17 considered an incentive under the NEM program. This means that they should be  
18 included in the costs in the UCT, along with offsetting benefits for the utility’s  
19 avoided costs. It is also worth noting that the export credits will vary depending on  
20 the ‘netting’ option, with hourly ‘netting’ creating the most export credits and annual  
21 the least.



1 **Q. HOW ARE THESE DIFFERENT TREATMENTS OF BENEFITS AND**  
2 **COSTS SUMMARIZED IN THE UCT?**

3 A. The key to providing the Commission with an accurate overview of any  
4 proposed NEM program under the UCT is to ensure that the benefits and costs are  
5 accurately quantified on either side of the equation. Therefore, I recommend the  
6 Commission not overly prescribe the formulas for the UCT, but rather evaluate the  
7 meaningfulness of the UCT in the context of the specific proposed NEM tariff.  
8

9 **Q. IN YOUR BENEFIT COST ANALYSIS, YOU PROVIDE A DETAILED LIST**  
10 **OF THE VARIOUS COMPONENTS OF COSTS AND BENEFITS TO**  
11 **CONSIDER, BUT SEVERAL HAVE A VALUE OF ZERO. HAVE YOU**  
12 **CHANGED YOUR ASSESSMENT OF THESE VALUES AS A RESULT OF**  
13 **THE DIRECT TESTIMONY SUBMITTED IN THIS DOCKET?**

14 A. No, I have not. The benefit cost analysis I presented in my testimony is  
15 focused on the current NEM programs and the inputs are based on the most recent  
16 NEM Methodology Values approved by the Commission. These values have been  
17 thoroughly vetted via the regulatory process in South Carolina, and are the best  
18 representation of the value of the current NEM programs. Certainly, the benefit cost  
19 approach would be applicable to evaluating future rate options, but until such rate  
20 options are proposed, there is no need to reconsider these inputs in this proceeding.  
21

1 **Q. ACT 62 INCLUDES THE REQUIREMENT TO REVIEW DIRECT AND**  
2 **INDIRECT ECONOMIC BENEFITS. MANY PARTIES IN THIS DOCKET**  
3 **HAVE ARGUED THERE ARE SUCH BENEFITS ARISING FROM NEM**  
4 **PROGRAMS AND THEY SHOULD BE INCLUDED IN ANY**  
5 **CORRESPONDING BENEFIT COST ANALYSIS. DO YOU AGREE?**

6 A. I agree that direct and indirect benefits should be considered in the benefit  
7 cost analysis designed to evaluate future programs if the following three criteria are  
8 met.

9 First, the economic impacts should be measurable and symmetric. This  
10 means that the methodologies and the inputs into those methodologies are  
11 sufficiently robust to withstand regulatory scrutiny. It also means that all aspects are  
12 reviewed and evaluated. For example, if the number of jobs to be created from solar  
13 investments is to be considered as an economic impact, the modelling of these  
14 impacts must be robust and transparent, and must account for the subsequent impact  
15 on tax revenues and benefits of additional expenditures from more disposable  
16 income from this job growth.

17 Similarly, because rates are a zero-sum game, if compensation paid to  
18 customer-generators is in excess of costs directly avoided by the utility, then the  
19 utility's ratepayers will pay more in rates. As a result, there may be corresponding  
20 economic costs due to increased electric bills, which would reduce the amount of a  
21 customer's income that can be spent on non-electricity expenditures, producing  
22 negative direct and indirect economic benefits in other sectors.

1           Second, causality must be clearly evidenced. That is, the values need to  
2 reflect the incremental benefits that are directly caused by the NEM tariff. It is true  
3 that investment in solar creates jobs, particularly in the short term, that have follow-  
4 on benefits. However, those jobs must be incrementally attributed to customer-  
5 generation system jobs and not overlap with job creation due to utility scale solar or  
6 other technologies. This means the actual job numbers would only be a fraction of  
7 the overall jobs creation numbers presented by others in this docket.

8           Even if benefits can be both measured and attributed to the NEM program,  
9 the Commission may still deem it inappropriate for ratepayers to pay customer-  
10 generators for these benefits because they may be in addition to other benefits related  
11 to direct savings to the utility that are already accounted for in the NEM rate  
12 structure. As I've noted before in my testimony, it is important to ensure that benefits  
13 are not double-counted, and that the utility is able to collect enough revenue to offset  
14 these benefit payments to customer-generators.

15           Many advocate that these direct and indirect economic benefits are essential  
16 to making customer-generation viable and without those benefits, the customers  
17 would not choose to install customer-generation. Effectively, this position seems to  
18 advocate that the Commission should approve subsidies for customer-generation  
19 beyond the direct benefits of avoided costs to the utility because there are other, non-  
20 utility cost-related benefits. However, not only must these benefits fit within the  
21 parameters I described above, but the Commission must also decide that these  
22 subsidies are just, reasonable, and necessary. Any such decision should only be

1 made in the context of a specific proposed tariff and after consideration of the diverse  
2 policy objectives of Act 62.

3 Finally, these subsidies create significant implications on rate levels, and, in  
4 particular, on low- and medium-income customer bills. It is well-established that  
5 customers that install generation behind the meter are wealthier homeowners who  
6 have the access and can afford these systems. As the Commission considers export  
7 credits and whether such credits should include any benefits not related to reduction  
8 in costs to the utility, an understanding of the impact on low- and medium customers  
9 should be considered. This is particularly true since paying for any subsidy  
10 essentially puts the Commission in the role of being a taxing agency to recover the  
11 subsidy, and Act 62 expressly cautions against such subsidies in the Solar Choice  
12 program.

13  
14 **Q. HAVE YOU REVIEWED THE STUDY SPONSORED BY SELC WITNESS**  
15 **HEFNER REGARDING THE ASSESSMENT OF DIRECT AND INDIRECT**  
16 **BENEFITS OF SOLAR?**

17 A. Yes. The study provides estimates of the total economic benefit of solar but  
18 lacks details that would be necessary to determine the validity of these estimates and  
19 applicability to the assessment of the current NEM program. For example, it is  
20 unclear what safeguards were utilized to determine that jobs were not double-  
21 counted—something I’ve cautioned against in my testimony—or sectors were

1 appropriately characterized. Further, I am not aware of any similar studies being  
2 used in regulatory filings to justify compensation for customer-generation.

3  
4 **Q. DO YOU AGREE WITH SELC WITNESS BEACH'S STATEMENT ON**  
5 **PAGE 4, LINE 22, TO PAGE 5, LINE 2, THAT "THE APPROPRIATE**  
6 **METHODOLOGY FOR ASSESSING THE BENEFITS AND COSTS OF NET**  
7 **METERED RESOURCES SHOULD FOCUS ON THE APPROPRIATE**  
8 **VALUE THAT THE CUSTOMER SHOULD RECEIVE FOR ELECTRICITY**  
9 **THAT IS EXPORTED FROM THEIR RESIDENCE OR PREMISE?"**

10 A. While this comment is not relevant to the evaluation of the current NEM  
11 programs, I want to point out that, this statement confirms my earlier comment that  
12 the means for compensating customer-generators is through the export credit;—  
13 therefore, care must be taken in determining the level of export credits in any  
14 successor rate and that, depending on the final successor rate structure, these  
15 incentives must be transparently treated in the benefit cost analysis for the successor  
16 tariff.

17 Although it confirms my prior statement, it also seems to imply that it is  
18 appropriate for the utility to provide a credit that equals all the benefits. This is not  
19 true and would lead to poor policy decisions related to a successor NEM tariff.  
20 Clearly, there are direct benefits from costs avoided by the utility that should be  
21 included in the export compensation. However, as I note in my testimony, to include  
22 these benefits in compensation to customer-generators, they must meet the three

1 criteria that such benefits are quantified with measurable evidence, attributed to the  
2 program and just and reasonable to assess on all ratepayers. Also as I noted, in  
3 assessing if the benefits are reasonable to assess on ratepayers, it is important to  
4 ensure that benefits from other means, such as tax benefits and tax rebates, are  
5 excluded from an export credit to avoid double-counting. ORS Witness Horii's  
6 direct testimony seems to support this statement:

7 The other benefits can be investigated and quantified, and Section 58-  
8 40-20(C) of Act 62 explicitly recognizes 'the indirect economic impact  
9 of the net energy metering program to the State.' However, such  
10 indirect impacts should not be included in the primary valuation of  
11 NEM. Rather, such benefits can be included in consideration of the  
12 tradeoffs between the goal of eliminating 'any cost shift to the greatest  
13 extent practicable' and the South Carolina General Assembly's intent  
14 to 'avoid disruption to the growing market for customer-scale  
15 distributed energy resources.'<sup>2</sup>  
16

17 As such, ORS Witness Horii and I agree on the framework for this evaluation,  
18 and I note that this is consistent with the policy that not all benefits should be  
19 included in a direct incentive to customer-generators.

20 Also, it is customary to measure the net benefits of demand side management  
21 (DSM) programs by considering whether the customer would have installed the  
22 behind the meter equipment regardless of the utility's incentives. Customers who  
23 were planning to install the equipment regardless of the program, but then  
24 participated in a program and received utility incentives to do so, are called "free-  
25 riders." In my analysis, I did not assume any free-riders, and this is appropriate for

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<sup>2</sup> Direct Testimony of Brian Horii p. 6, lines 1-7.

1 evaluating the current NEM program, which was designed to promote this new  
2 technology. However, as South Carolina migrates to more complex rate structures  
3 in accordance with Act 62, and potentially expands its view on the appropriate level  
4 and breadth of benefits to consider, the Commission should strive to improve the  
5 rigour of the benefit cost analyses by adjusting for customers who would install these  
6 systems without the export credits, consistent with DSM program evaluations.  
7

8 **Q. SHOULD DER CUSTOMERS BE PLACED INTO A SEPARATE CLASS?**

9 A. It is possible that a separate rate class is appropriate, but this question would  
10 require complex analysis in the context of a specific tariff. However, a key  
11 component of that analysis would be whether customers have a measurable  
12 difference in cost of service.  
13

14 **Q. DO YOU AGREE WITH ORS WITNESS HORII'S EXPLANATION AS TO**  
15 **WHY MORE SCRUTINY SHOULD BE APPLIED BY THE COMMISSION**  
16 **FOR COST OF SERVICE STUDIES FOR CUSTOMER-GENERATORS?**

17 A. Yes. Specifically, ORS Witness Horii states that:

18 Due to the increased complexity of modern grids with  
19 renewable generation, and the increased sophistication of  
20 many aspects of utility operations and planning, traditional  
21 embedded cost methods may be out of step with current and  
22 future cost causation. When considering costs to be allocated  
23 to a customer class, the Commission should include all  
24 customer-incurred costs related to use of the utility grid. These  
25 include the standard cost items that are traditionally included  
26 in embedded COS studies such as production, transmission,

1 distribution, and customer-related costs. With increasing levels  
2 of behind-the-meter solar, however, a COS study needs to  
3 allocate costs based on a customer's maximum use of the grid,  
4 whether in the normal (grid power flowing to the customer) or  
5 reverse (customer power flowing to the grid) direction.

6  
7 The study should also include any costs for new grid  
8 investments to address reverse flow as well NEM solar grid  
9 integration costs which would likely be exacerbated by drops  
10 in distributed solar generation.<sup>3</sup>  
11

12 I agree with ORS Witness Horii's general premise that, because the  
13 complexity of modern grids is increasing with renewable generation, traditional  
14 cost-of-service methodologies should be updated for "costs related to use of the  
15 utility grid," "a customer's maximum use of the grid," and whether the customer is  
16 serving load or exporting. Figure 1 below shows a simple example of the use of the  
17 grid by a customer that consumes 1 kW each hour of the day. Before the installation  
18 of a customer-generation system, the grid must be able to accommodate delivering  
19 1 kW every hour of the day. After the installation of the customer-generator system,  
20 the grid must be able to both accommodate delivering 1 kW when the system is not  
21 generating and receiving and relocating 2 kW whenever the system is generating.

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<sup>3</sup> Direct Testimony of Brian Horii p. 18, lines 5-17.

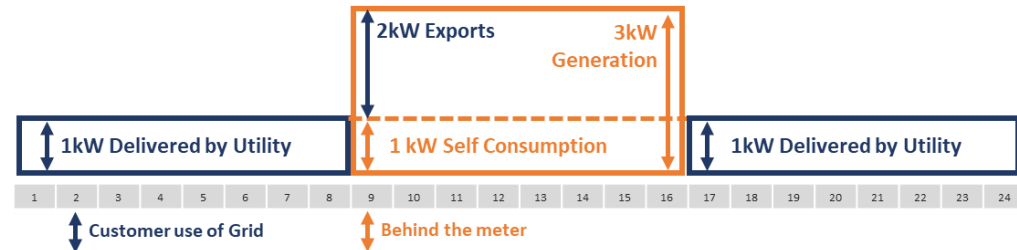


Figure 1: Simple Example of Grid Use by Customer-Generator

**Customer Use of the Grid Before Customer-Generator System is Installed**



**Customer Use of the Grid After Customer-Generator System is Installed**



In this way, NEM customers differ from non-NEM customers, and such differences are important when developing rate structures. If these costs are different, then the customer-generator should pay for these cost differences. This is not creating discriminatory rates for the customer-generator, but rather holding to a well-established rate design principle that customers should pay for the costs they create. If, after thorough review, there is evidence that the customer-generators may have distinctly different cost profiles, consideration should be made to collect those costs. One option is to create additional fees for these customers (like reactive power fees levied on certain commercial customers that disrupt power factors beyond normal conditions). The second is to segment these customers into their own customer class and allocate the cost of service to that class with subsequent rate designs to collect those costs from those customers. However, as I noted above, any such decisions could only be made upon review of a specific NEM tariff proposal.

**Q. AS YOU REFLECT ON THE COST BENEFIT ANALYSIS OF THE CURRENT NEM PROGRAMS, ARE THERE ANY CONSIDERATIONS TO EMPHASIZE FOR THE DEVELOPMENT AND ASSESSMENT OF A NEW SOLAR CHOICE TARIFF?**

**A.** Yes. As ORS Witness Horii notes, understanding marginal costs is useful in developing an NEM tariff:

Marginal costs represent the change in the cost to provide a good (energy, generation capacity, T&D capacity, etc.) due to small changes in demand from the good. To be useful for use in development of a Solar Choice Metering Tariff, the marginal costs should have the following characteristics:

1. Based on future costs rather than past investments or costs. Historical costs can be useful if they are indicative of future costs, but direct estimates of future costs are preferred.
2. Reflect future conditions. Absent the impact of the resources one wants to evaluate. Marginal costs are estimated as changes in costs relative to a base case. If you include future NEM solar in your base forecast, then the benefits provided by that solar could already be reflected in your base case and may reduce the estimated marginal cost associated with further load reductions from solar. The issue arises because the avoided costs of a single resource like NEM solar generally decline as you add more of that resource to the system. For solar, this is particularly acute as the restricted output pattern of solar can shift the timing of the need for capacity. Each additional MW of solar is worth less and less to the system.
3. Should not be unduly discriminatory against specific technologies. However, if specific technologies result in cost changes that are not captured or reflected by other marginal cost components, it is appropriate to include an adjustment to the marginal costs. Cost-based differentiation by technology is reasonable.<sup>4</sup>

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<sup>4</sup> Direct Testimony of Brian Horii p. 20, line 13, through p. 21, line 10.

1  
2 ORS Witness Horii notes that care must be taken to look forward on costs, and he  
3 notes that marginal costs created by a technology (including emerging technologies  
4 such as battery storage) should be included in the benefit cost analysis. In the  
5 context of reviewing the current NEM program, and potentially new Solar Choice  
6 tariffs, I agree that care must be taken in looking at future costs and any structure  
7 should not be biased toward any specific technology. While I agree that marginal  
8 costs have their place in assessing the direct impacts on the utility of an incremental  
9 kWh of a customer generator, DESC's and other the utilities'  
10 rates are based on embedded costs, which is consistent with long-standing  
11 regulatory practices in South Carolina. In summary, both marginal and embedded  
12 cost methodologies are useful and provide a more complete picture in assessing  
13 future Solar Choice tariffs.  
14

15 **Q. WHAT KEY ASPECTS SHOULD THE COMMISSION EVALUATE IN**  
16 **ESTABLISHING DESC'S UPCOMING SOLAR CHOICE TARIFF?**

17 A. Any new NEM Solar Choice tariff under Act 62 should minimize any cost  
18 shift, ensure continued promotion of innovation, and not overly incentivize one  
19 technology at the expense of stifling other technologies that could address the same  
20 system needs more efficiently. To that end, I advocate several principles be  
21 considered.

1 First, costs and benefits should be well understood and evidenced with robust  
2 analytics.

3 Second, these costs and benefits should be appropriately allocated and  
4 distinguished. For example, if a technology created additional benefits or costs,  
5 those benefits and costs should be noted and robustly quantified. After doing so,  
6 customer segmentation should be reviewed to make sure that customers that  
7 embrace certain technologies continue to have the same cost-of-service as the class  
8 they were in prior to investing in those technologies. If a new customer class is  
9 required because these cost of service studies reveal distinguishable and measurable  
10 differences between these customers and their current customer class, then a new  
11 class for those customers should be created. Note that this may result in multiple  
12 new customer classes because there may also be differences due to service level and  
13 class, such as residential or small general service . Creating new customer classes  
14 as an expansion of existing classes is not unprecedented. Recently, California  
15 approved a new customer class by allowing the creation of a Commercial Electric  
16 Vehicle customer class. The cost of service of that class was demonstrated to be  
17 different, and a new customer class was created with a rate that was designed to  
18 collect the costs that were allocated to that class.

19 Next, costs should be incorporated into rate structures that are designed to  
20 ensure those costs are fully collected from the customers that create those costs. In  
21 other words, customers should only be able to avoid costs by changing behind-the-  
22 meter behavior in a way that results in a corresponding change in costs to the utility.

1 If the costs of serving remain even after the change in behavior, the customer should  
2 still pay those costs. This necessarily means that a successor NEM tariff will have  
3 a structure to collect those costs that is not tied to energy consumption given that  
4 DESC must plan and invest in its system for NEM customers just as it does for non-  
5 NEM customers, regardless of the fact that NEM customers typically consume less  
6 electricity from DESC.

7 Lastly, the benefits should be tracked separately and transparently included  
8 in incentives, not in a reduction to rates. This is very important, particularly as these  
9 benefits change over time. Changes over time may be due to policy decisions. For  
10 example, the Commission could decide that non-participating customers should pay  
11 a subsidy to encourage technology adoption. Similarly, the benefit may decline as  
12 the state reaches a certain penetration of solar such that an incremental kWh of solar  
13 provides minimal incremental benefits to the system.

14  
15 **Q. WHAT GENERAL PROCESS FOR CREATING A SOLAR CHOICE**  
16 **METERING TARIFF DO YOU RECOMMEND THAT THE COMMISSION**  
17 **FOLLOW?**

18 A. Any process should ensure the considerations for a new solar choice tariff I outlined  
19 above:

- 20 1. Fully understand costs and benefits of groups of customers;
- 21 2. Allocate those costs to those customers;

- 1           3.     If necessary, segment customers according to their contribution to
- 2                 these costs and benefits;
- 3           4.     Design rates to charge customers for the costs they create; and
- 4           5.     Create incentives to credit customers for the benefits they create.

5       ORS Witness Horii also outlines a process<sup>5</sup> for consideration of a new NEM tariff,  
6       which I've summarized below:

- 7           1.     Determine customer classes such that customers are grouped with
- 8                 similar customers based on cost of service and customer homogeneity.
- 9           2.     Allocate costs to these customer classes using a cost of service (COS)
- 10                studies and standard cost allocation methodologies employed by the
- 11                South Carolina utilities.
- 12           3.     Design rates such that the final rates will collect the costs allocated to
- 13                the class based on the total usage characteristics of the entire class.
- 14                This last step should also include a review of whether there are certain
- 15                customers that differ substantially from the average usage
- 16                characteristics and thus either subsidize other customers in the class
- 17                or are being subsidized by other customers in the class. As part of
- 18                this, a review of the risk of inherent subsidization should be reviewed
- 19                to understand the impact on certain vulnerable customers.

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<sup>5</sup> Direct Testimony of Brian Horii p. 35, line 19, through p. 37, line 15.

1 I propose that ORS Witness Horii's process outlined above would provide a  
2 reasonable stepwise approach to developing the new rates and would result in full  
3 consideration of the five points I outlined as being critical to the appropriate  
4 structure of a successor rate.

5  
6 **Q. DOES THIS CONCLUDE YOUR PRE-FILED RESPONSIVE**  
7 **TESTIMONY?**

8 A. Yes, it does.